TEACHERS' RETIREMENT BOARD

INVESTMENT COMMITTEE

SUBJECT: U.S. Equity Benchmark Task Force - Study of U.S. Equity Indices	ITEM NUMBER: 8
	ATTACHMENT(S): 3
ACTION: ___	DATE OF MEETING: March 6, 2002
INFORMATION: X	PRESENTER(S): Elleen Okada Steven Tong

Executive Summary

A mandate for the Investment Branch in year 2001-2002 is to complete an examination of the various benchmarks that are available to track the performance of the broad domestic equity market. The purpose of this study is to identify the major benchmarks of the U.S. equity market that best represent the overall market and select a benchmark that is best suited for CalSTRS.

The issues facing CalSTRS in selecting a benchmark for the U.S. equity asset class are as follows:

1. When does an index represent the broad U.S. equity market?
2. If a broader index is preferred, then is the cost to replicate that index worth the benefits received?
3. How easy is the index to replicate?

A broad U.S. equity market benchmark reflects the industries and sectors in the equity market and the return and risk characteristics of the equity market as a whole. CalSTRS will use the benchmark to evaluate the overall performance of the total domestic equity asset class. The benchmark may also be used to create a purchasable and replicable vehicle for passive investment.

The study is broken down into three parts and will be presented over the next several Investment Committee meetings. This presentation begins with a description of the broader indexes that are available to measure the performance of the overall market. The next presentation will provide a detailed comparison of the benchmarks. The final presentation will help the Board conclude which benchmark is best suited for CalSTRS. Staff anticipates completing the study in May 2002.

Background

California State Teachers' Retirement Board (Board) has adopted an Investment Management Plan to manage the growth of investment assets. The Investment Management Plan addresses the broad policies, which provide the general framework for the operation of CalSTRS' investments. Significant aspects of the Investment Management Plan are strategic and tactical asset allocation targets and ranges, and investment structure. Within the context of the investment structure are:

1. Benchmarks for each asset class.
2. Active and passive management styles including the relative percentage of each segment.
3. The number and types of external managers.
4. Monitoring and controlling direct and indirect costs of each asset category.
5. Appropriate reporting standards and time horizons.

To facilitate the periodic reporting and to provide a relative measurement of the success of active and passive investment portfolios, each asset category has a performance objective reflecting a specific market. The performance benchmark selected for each asset category is identified in the Investment Management Plan.

The Board last adopted an asset allocation policy in mid-2001. Within this policy, the Board reaffirmed a target proportion for domestic equities of 38% of total portfolio assets. Given the relatively high proportional allocation to domestic equities, selecting the appropriate benchmark for the domestic equity portfolio becomes especially important.

One of the most critical elements in obtaining optimal investment results from CalSTRS' investment portfolios is benchmark selection. This benchmark will become a yardstick for measuring the performance of the domestic equity class. A benchmark is typically a published market index and used to provide a neutral or unbiased evaluation of passive and active portfolios.

Historical Overview

Prior to 1970, CalSTRS was prohibited from owning equity securities. In 1970, Proposition 6 was passed, which removed the prohibition but placed a statutory limitation on the maximum percentage of equity that could be held in the investment portfolio. Subsequent to this event, the first equity security was purchased in March 1973. By June 1973, CalSTRS had invested approximately 4% of the total investment portfolio into a small number of "blue chip" companies. CalSTRS' equity exposure remained relatively constant varying between 3% and 5% of the total investment portfolio for the next six years. In 1979/1980, there was a change in the asset allocation with the market value of domestic equity portfolio rapidly increasing to 18% of the total investment portfolio.

In 1983, Proposition 21 was implemented, which eliminated the statutory limitations on the equity component of the investment portfolio. During 1985, the general consultant completed an asset allocation review and recommended an increased to domestic equity securities to 50% of the investment portfolio. Historically, this percentage has been the highest allocation to domestic equity.

Until 1985, all of the domestic equity was managed in an active style. In implementing the 1985 Investment Management Plan, an initial allocation was made to passive management. The Board adopted the Wilshire 5000 Index as the benchmark for the passive domestic equity segment. Since 1985, there has been an increasing reliance on passive management.

In 1996, the Board and Staff considered a variety of equity benchmarks for the domestic equity asset class. The objective of the review was to reaffirm the Wilshire 5000 Index or identify a more appropriate benchmark for the domestic equity class. After research, analysis, and comparison, the Board adopted the Russell 3000 Index as its benchmark for the domestic equity portfolio. The Russell 3000 Index consists of the largest 3,000 U.S.-domiciled companies, weighted by their market capitalization (a company's shares outstanding multiplied by its market price).

Importantly, the Russell 3000 Index: (i) was a viable benchmark that was appropriate for evaluating the performance of the total domestic equity portfolio and (ii) was supported by the passive investment industry. Additionally, the change in benchmarks reflected a growing and significant institutional acceptance of the Russell 3000 Index as an asset class benchmark.

Domestic Equity Management

The Russell 3000 Index can be broken out into a variety of different modules that reflect the major risk factors that influence domestic equity asset class performance over long time periods. Two major risk factors that have dominated equity performance in recent years are: (i) company size and (ii) whether a stock's performance is driven by a company's earnings growth (a growth stock) or its balance sheet (a value stock).

Institutional investors such as CalSTRS have traditionally utilized the S&P 500 Index to construct passive portfolios that represent the large company component of the U.S. equity market. While the S&P 500 Index does not represent fully the broad U.S. equity market, it was the first domestic equity benchmark widely adopted by the institutional community several decades ago. In fact, due to this long-standing acceptance, individual securities within the S&P 500 Index are typically the most liquid of all stocks, making them attractive for developing passive portfolios.

The companies in the S&P 500 Index comprise approximately 84% of the Russell 3000 Index on a market capitalization basis. These companies are significantly larger than the average company within the broader market. As a result, practitioners and institutional investors recognize that the S&P 500 Index contains a "large company bias" and may not fully reflect the company size characteristics of the broader U.S. equity market. An important outgrowth of this finding is that investors are beginning to treat the S&P 500 Index as a large-company module within the broader asset class. In other words, from a benchmark construction viewpoint:

Approximate Russell 3000 ~ S&P 500 (84%) + 2,500 other stocks (16%)

Reflecting these trends and the above modular structure, the Board adopted an equivalent domestic equity portfolio structure in 1997 and began implementing this structure in 1998. The two major structural changes mandated by the Board in 1997 were: (i) to maintain a portfolio structure equivalent to the above, but adjusted for actual segment weightings over time; and (ii) place 20% of the assets in "active" mandates and 80% in "passive" mandates. Active mandates are those investment assignments that, in aggregate, the Board expects to outperform the asset class benchmark over an investment cycle. Passive mandates are those assignments that, in aggregate, should match the investment performance of the benchmark.

In May 2001, the Board adopted refinements for the U.S. equity benchmark. The Board adopted the S&P 500 Index and Russell Small Cap Completeness Index (both ex-Tobacco) as the policy modules of the U.S. equity asset class. This modular structure closely resembles the Russell 3000 ex-Tobacco Index. However, the S&P 500 ex-Tobacco Index contains several non-domiciled/incorporated stocks. As of December 31, 2001, there were eleven non-domiciled/incorporated companies (approximately 3% of the S&P 500) in the S&P 500 ex-Tobacco Index. These eleven stocks are not included in the Russell 3000 ex-Tobacco Index.

The Russell Small Cap Completeness ex-Tobacco Index is composed of the Russell 3000 ex-Tobacco Index excluding the companies in the S&P 500 ex-Tobacco Index. Since the S&P 500 does not consist of the 500 largest companies in the United States, the Russell Small Cap Completeness does not comprise the 2,500 smallest companies in the Russell 3000 Index. Frank Russell Company constructed the Russell 2500 Index to measure the performance of the 2500 smallest companies in the Russell 3000 Index.

Major Domestic Equity Benchmarks

At year-end 2001, the total U.S. equity market was approximately $15 trillion in capitalization and consisted of over 6,800 publicly traded securities. These securities had a market capitalization ranging from $398 billion to $0.2 million. A market-capitalized composite of the publicly traded securities can be utilized as a broad market benchmark.

Major benchmarks that purport to measure the broad U.S. stock market include the following:

- Dow Jones U.S. Total Market Index
- Morgan Stanley Capital International USA Index
- Russell 3000 Index
- Salomon Smith Barney Broad Market Index
- Standard & Poor's 1500 Index
- Wilshire 5000 Index

- Wilshire 2500 Index

The following are popular benchmarks that are used as market barometers of specific segments of the U.S. equity market:

- Dow Jones Industrial Average
- NASDAQ Composite Index
- Russell 1000 Index
- Standard & Poor's 500 Index

Attachment 2 contains a description of each benchmark.

Several of the benchmarks listed above are recognized as broad market indices (i.e., they are structured to capture a broad range of capitalization levels of the stock market). However, while other benchmarks such as the Dow Jones Industrial Average, the NASDAQ Composite, Russell 1000, and the S&P 500 are popular, they do not include important segments of the market. These four indices tend to be less viable benchmarks because they are more narrowly constructed and do not include all capitalization levels. The selected domestic equity benchmark should represent a significant portion of the opportunity set of the U.S. equity market. Therefore, Staff will conduct analysis of only the broad U.S. equity market benchmarks to determine which index is best suited for CalSTRS.

Criteria for Evaluating and Selecting the a Domestic Equity Benchmark

According to the Association of Investment Management and Research (AIMR), a useful benchmark should possess several basic characteristics. In the next presentation, this framework will be used in evaluating the available benchmarks for the U.S. equity market. A useful benchmark should be:

1. ***Unambiguous***. The names and weights of securities comprising the benchmark are clearly delineated.

2. ***Investable***. The option is available to forego active management and simply hold the benchmark.

3. ***Measurable***. It is possible to readily calculate the benchmark's own return on a reasonably frequent basis.

4. ***Appropriate***. The benchmark is consistent with the manager's investment style or biases.

5. ***Reflective of current investment opinions***. The manager has current investment knowledge (be it positive, negative, or neutral) of the securities, which make up the benchmark.

6. ***Specified in advance***. The benchmark is constructed prior to the start of an evaluation period.

Source: Benchmark Portfolios and the Manager/Plan Sponsor Relationship, AIMR, Level III, Portfolio Management II, Book 3, CFA 2000.

Index Information

Dow Jones Industrial Average

The Dow Jones Industrial Average (the "Dow" or DJIA) was first unveiled in 1896 by Charles H. Dow. However, it wasn't until 1928 when the industrial average expanded to 30 stocks, the industrial average started to find a following.

Dow Jones U.S. Total Market

The Dow Jones U.S. Total Market Index (DJTMI) is designed to provide 95% representation of the U.S equity market. The DJTMI is constructed by Dow Jones Indexes. History is available back to December 1986.

Morgan Stanley Capital International USA Index

Originally, the Morgan Stanley Capital International USA Index (MSCI USA) was designed to provide 60% representation of the total market capitalization of the U.S. equity market. In December 2002, MSCI announced that it would adjust the MSCU USA Index for free float and increase the target market representation from 60% of total market capitalization to 85% of free float-adjusted market capitalization. The combined changes will be implemented in two phases, as of the close of November 30, 2001, and May 31, 2002. In the interim, MSCI has provided provisional indices that fully reflect the enhancements.

NASDAQ Composite Index

The NASDAQ Composite Index (NASDAQ) consists of all domestic and non-U.S. based securities listed on the NASDAQ exchange. Today, the NASDAQ Index consists of over 5000 companies. The NASDAQ Index was introduced in 1971.

Russell 3000 Index

The Russell 3000 Index consists of the 3,000 largest-capitalization stocks in the United States as of the index reconstitution date, which is annually at June 30. The Russell 3000 Index is constructed by Frank Russell Company and was introduced in 1979.

Russell 1000 Index

The Russell 1000 Index consists of the 1,000 largest-capitalization stocks in the United States as of the index reconstitution date, which is annually at June 30. The Russell 3000 Index is constructed by Frank Russell Company and was introduced in 1979.

Salomon Smith Barney Broad Market Index

The Salomon Smith Barney Broad Market Index (SSBBMI) consists of all stocks with available market capitalization greater than $100 million.

Standard & Poor's 1500 Index

The Standard & Poor's 1500 Index (S&P 1500) consists of all stocks in the S&P 500, S&P 400 MidCap, and S&P 600 SmallCap Indices. The S&P 1500 Index is constructed by Standard & Poor's and was introduced in May 1995.

Standard & Poor's 500 Index

The Standard &Poor's 500 Index (S&P 500) is the most widely used domestic equity benchmark among institutional investors. It consists of 500 stocks selected to be representative of the major industry groups, rather than consisting of only the largest capitalization stocks. The S&P 500 Index is constructed by Standard & Poor's and was introduced in March 1957.

Wilshire 5000 Index

The Wilshire 5000 Index consists of all publicly traded equity securities listed on the major U.S. exchanges. Despite its name, the index currently includes over 7,000 stocks. The Wilshire 5000 Index is constructed by Wilshire Associates and was introduced in 1971.

Wilshire 2500 Index

The Wilshire 2500 Index consists of the largest 2500 stocks in the Wilshire 5000 Index. The Wilshire 2500 Index is constructed by Wilshire Associates and was introduced in 1978.

Glossary

Active Management – An investment strategy that involves active selection of securities in an attempt to produce above-average returns on a risk-adjusted basis.

Blue Chip Stock – Stock of a nationally known company that has a long record of profit growth and dividend payment and a reputation for quality management, products, and services.

Capitalization-Weighted Index – An index whose components are weighted according to the total market value of their outstanding shares. The impact of a component's price change is proportional to the issue's overall market value, which is the share price times the number of shares outstanding.

Growth Stock – Stock whose earnings are expected to grow at a faster-than-average rate. The stock typically has above average P/E, P/BV and P/CF ratios, and high ROE.

Index Fund – A fund that holds shares in proportion to their representation in a broad market index.

Large Capitalization Stock – Stock that typically has at least $5 billion in outstanding market value.

Market Capitalization – The value of a corporation as determined by the market price of its issued and outstanding common stock. It is calculated by multiplying the number of outstanding shares by the current market price of a share.

Middle Capitalization Stock – Stock that typically has between $1 billion and $5 billion in outstanding market value.

Passive Management – An investment strategy whose goal is to replicate the return and risk characteristics of a market index.

Small Capitalization Stock – Stock that usually has a market capitalization of $500 million or less.

Value Stock – Stock with below-average P/E ratio and price/book ratio.